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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/640,850	08/13/2003	Yasunori Ito	MURTP083D1	9131
22434	7590	11/13/2006		
BEYER WEAVER & THOMAS, LLP P.O. BOX 70250 OAKLAND, CA 94612-0250			EXAMINER WILKINS III, HARRY D	
			ART UNIT	PAPER NUMBER

1742

DATE MAILED: 11/13/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/640,850

Applicant(s)

ITO ET AL.

Examiner

Harry D. Wilkins, III

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 06 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13 and 14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 27 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☒ Certified copies of the priority documents have been received in Application No. 09/392,466.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 6 October 2006 has been entered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 13 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cowman (US 5,115,221) in view of Matsuoka et al (US 3,872,582) and Matsuo et al (US 4,324,702).

Cowman teaches the invention substantially as claimed. Cowman teaches (see abstract, figures and col. 6, line 4 to col. 15, line 15) a method of making a varistor (variable resistor, which genus includes a thermistor) including stacking a specified number of ceramic green sheets, cutting the stacked ceramic green sheets to obtain an element, applying a ceramic material having a higher specified resistance than the

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ceramic green sheets entirely over the outer surface except the end parts, baking the element, and depositing conductive terminal layers on the opposing end parts.

Thus, Cowman fails to teach that the conductive terminal layers are deposited by an electrolytic plating process. In fact, Cowman is completely silent as to how the coating is formed (see col. 9, lines 39-47). Cowman assumes that one of ordinary skill in the art was well aware of how to apply the terminals.

Matsuoka et al teach (see abstract, figure and col. 5, lines 4-11) conventional methods for applying a conductive terminal on a sintered ceramic resistor element, similar to the one disclosed by Cowman. Matsuoka et al teach that the known methods included electrolytic plating.

Therefore, it would have been within the knowledge and skill of one of ordinary skill in the art to have used the conventional electrolytic plating method as disclosed by Matsuoka et al for applying the conductive terminal of Cowman because the electrolytic plating was known to be capable of forming the conductive terminals.

Further, Cowman fails to teach that the ceramic green sheet compositions were selected to achieve a ceramic thermistor element having a specific resistance lower than $200 \Omega \cdot \text{cm}$ and comprising as principal component oxides containing two or more metals selected from the group consisting of Mn, Ni, Co, Fe, Cu and Al.

Matsuo et al teach (see abstract and col. 2, line 49 to col. 3, line 22 and col. 10, lines 32-34) that thermistors having desirable low resistance could be made from various compositions, including mixtures of Mn, Ni, Fe and Cu oxides.

Therefore, it would have been obvious to one of ordinary skill in the art to have made the ceramic green sheets of Cowman from the ceramic composition disclosed by Matsuo et al because Matsuo et al teach that the disclosed compositions had excellent properties as thermistor elements including low specific resistance and high B-constant. Additionally, Matsuo et al show that the specific resistance of the thermistor was a known result effective variable based upon the composition of the thermistor element. Thus, it would have been within the ability of one of ordinary skill in the art to have selected an appropriate composition for achieving a desired specific resistance of the formed thermistor.

Cowman teach (see col. 7, lines 15-64) that the ceramic layer (21) had a specific higher resistance than the ceramic green sheets in order for the varistor to function and states that the ceramic layer can either be of the same composition as the ceramic green sheets albeit with higher specific resistance or a differing composition with higher specific resistance.

Therefore, it would have been within the ability of one of ordinary skill in the art to have selected the same material for the outer ceramic layer (21) as was selected for the green sheets because Cowman teaches that such selection was appropriate as long as the ceramic layer (21) had higher resistance than the ceramic green sheets. The ceramic material of Matsuo et al had as principal components, oxides including Mn and Ni and also comprised at least one metal such as Zr or Fe.

Regarding claim 14, Cowman teaches (see col. 7, lines 31-64) that the ceramic layer and the thermistor element can be made of the same material.

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Response to Arguments

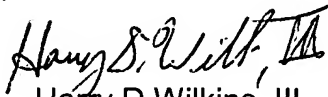
4. Applicant's arguments with respect to claims 13 and 14 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Harry D. Wilkins, III whose telephone number is 571-272-1251. The examiner can normally be reached on M-F 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy V. King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Harry D Wilkins, III
Primary Examiner
Art Unit 1742

hdw